Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

284Mr
.4

The MARKET FOR FOOD in SELECTED PUBLIC and PRIVATE INSTITUTIONS

by Wm. S. Hoofnagle
Philip B. Dwoskin
James A. Bayton

Marketing Research Report No. 84
U. S. DEPARTMENT OF AGRICULTURE
Agricultural Marketing Service
Washington, D. C. March 1955

For sale by the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C. Price 30 cents

ACKNOWLEDGEMENTS

This report was prepared in the Market Development Branch, Marketing Research Division, Agricultural Marketing Service.

The planning of an overall study, The Use of Protein and Other Foods in Institutional Diets, of which this research is a part, was directed by Shelby A. Robert, Jr., of the Market Development Branch, Agriculutral Marketing Service.

Collection of data was carried out by Arthur D. Little, Inc., of Cambridge, Mass., under the direction of Aileen Merwin (deceased).

This study was made, under contract, with funds authorized under the Agricultural Marketing Act of 1946 (RMA, Title II). The responsibility for the interpretation and analysis of the data is solely that of the authors.

CONTENTS

	Page
Summary	iv
Introduction	1
Methodology	2
Survey findings	4
Food purchasing practices	4
Day-to-day purchases	4
Formal or informal competitive bid buying	4
Advance contract	4
The market potential for food in institutions	4
Milk, cream, and cheese	5
Eggs	9
Meat, poultry, and fish	9
Fats and oils	12
Dry beans, peas, and nuts	12
Potatoes and sweetpotatoes	12
Citrus fruits and tomatoes	16
Leafy, green, and yellow vegetables	16
Other vegetables and fruits	19
Flour, cereals, and baked goods	19
Sugar and sweets	19
Money value of food used in institutions	19
Distribution of money values among food groups	23
Sources of supply	26
Homes for the aged	26
Mental institutions	26
Homes for children	26
Penal institutions	29
Appendix	30
List of tables	37

SUMMARY

A pilot study designed to appraise institutions--charitable, mental and penal--as a potential market for foods in large supply was made in 16 non-Federal institutions located in the northeastern and southeastern regions of the United States. Basic data obtained were the per capita quantities of food issued to institutional kitchens, the sources of supply, and the prices paid. Quantities of the foods of different categories used in these institutions were compared to per capita quantities of food groups that would be issued to institutional kitchens under the low-cost food plan developed by the former Bureau of Human Nutrition and Home Economics and presented in Planning Food for Institutions, Agriculture Handbook No. 16. Quantities of foods listed in Planning Food for Institutions may be described as a practicable guide, often used in institutional food planning.

The low-cost plan was used for comparative purposes because most of these institutions operate on rather limited budgets. If sufficient funds were available to operate food programs on higher cost plans, market potentials might be greater for some types of food than those indicated in this study. For example, if the moderate-cost plan were to be used, there might be a larger market potential for meat and a smaller one for dry beans and peas.

This study revealed that the extent of the market potential for a particular kind of food depended, in some degree, upon the type of institution involved and its regional location. In mental institutions and homes for the aged, in both regions studied, and in children's homes in the Southeast, more kinds of food were being issued in smaller quantities than those suggested in the low-cost food plan. Many of these foods--citrus fruits, dairy products, eggs, meats, and leafy, green, and yellow vegetables--are important for a good diet.

Two types of institutions may be important outlets for increased utilization of surplus foods, especially those produced locally. They are mental institutions and homes for the aged. Mental institutions presently comprise the largest proportion of the inmate population, representing the larger part of the institutional market. Inmates in homes for the aged make up the next largest category, with the possibility of increasing proportionately faster than other segments of the institutional population in the years ahead. In addition, institutions may also provide an outlet for increased quantities of those foods that are distributed through Government programs.

For each type of institution within a region, the costs of the foods used in the various food groups were compared with the costs that would have been incurred under the suggested low-cost food plan, on a single price schedule. This analysis indicated that there were some institutions which could make changes in the amounts of the various food groups used and achieve a better diet without increasing expenditures. Other institutions could not do this.

To some extent, food expenditures were reduced when products were supplied by institutional farms, Government distribution programs, and gifts. This was particularly true in the Southeast in institutions which benefited by Government food distribution programs.

THE MARKET FOR FOOD IN SELECTED PUBLIC AND PRIVATE INSTITUTIONS

By William S. Hoofnagle, agricultural economist, Philip B. Dwoskin, agricultural economist, and James A. Bayton, social science analyst, Market Development Branch, Agricultural Marketing Service

INTRODUCTION

Institutions--penal, charitable, mental--comprise an outlet for food that has received little attention in market analysis.[1] This may be attributed, in part, to the fact that the institutional outlet represents a relatively small part of the total market for agricultural products. Furthermore, information on this particular segment of the market has been costly and difficult to obtain.

Information relating to special market characteristics, consumption, and purchasing policies of this outlet is limited. Some exploratory work has been done at the State level and in Federal prisons and hospitals.[2] The present pilot study is intended to enlarge existing information so that producers, processors, and industry groups can have broader knowledge on total markets. Knowledge of the nature of demand for fresh and processed foods is incomplete without some data on quantities consumed in each market outlet.

According to the 1950 census 1,566,846 persons, or about 1 out of every 100 in the population, were living in some type of public or private institution (table 1). Of the total inmate population, almost two-fifths were in mental institutions and one-fifth were in homes for the aged. The next largest category was that confined to various penal institutions. The remainder were living in homes, schools, and special types of hospitals.

Approximately 61 percent of the inmate population was male, and 39 percent female. Nonwhites made up 14 percent of this population. Between 65 and 75 percent of the institutional population was confined to some type of public institution.[3]

Many institutions operate farms and produce a substantial part of required food, but data are lacking to indicate their total number. About 50 percent of the Federal prisons operated farms.[4] All of the mental hospitals and some of the other institution types covered in this study obtained some food from their farms.

Many institutional farms produce vegetables, meat, poultry, and dairy products. By using cold storage and canning facilities, some of the institution-produced food can be kept for future use. Some institutions covered in the study operated small canneries

[1] The institutional population as covered in this study consists of persons who are inmates of State or local public institutions or private establishments organized to care for resident prisoners, orphan children, delinquent and mental inmates, and for aged, infirm, or needy persons. This pilot study in no way covers food marketed through general hospitals, restaurants, hotels, and other establishments that serve meals to the public.

[2] The Bulletin of the California Dietetic Association, Vol. XII, No. 1, Spring issue 1945. Institutional feeding practices and short methods of calculating the nutritive value of diets in large-scale feeding received attention from George H. Berryman and Paul E. Howe.

[3] A public institution is one supported by tax funds and controlled by some governmental agency--local, State and Federal.

[4] Federal Bureau of Prisons, Annual Report, Department of Justice, Washington, D. C., 1951.

during the summer. In addition to home-produced foods, surplus products were often acquired for processing. Foods received through Government distribution programs and gifts from private donors were also processed for storage. These practices were followed in most institutions where labor and facilities were available to provide necessary services.

Each institution, like each family unit, has its own pattern of food use. Food requirements in homes for children naturally differ from those in homes for the aged. Private institutions sometimes have special food selections because of racial or religious customs. Many institutions show variations in food expenditures.

TABLE 1.--Distribution of the institutional population, by type of institution, 1950[1]

Type	Institutional population[2]	
	Persons	Percentage
	Number	*Percent*
Mental institutions	613,628	39
Homes for the aged	296,783	19
Prisons and reformatories	264,557	17
Homes for the physically and mentally handicapped[3]	155,188	10
Homes and schools for dependent children and juvenile delinquents	140,315	9
Tuberculosis and special hospitals[3]	96,375	6
Total	1,566,846	100

[1] Includes both public and private institutions but excludes general hospitals. Compiled from data furnished by Bureau of the Census.
[2] Includes population in Federal institutions which were not included in this study.
[3] Not included in sample.

This study evaluates the importance of institutions--penal, charitable, mental--as a market outlet for fresh and processed foods, in terms of quantities issued, expenditures, sources of supply, and institutional purchasing policies and practices. It also appraises these institutions as potential market outlets for certain kinds of food now in abundant supply.

A longstanding weakness in marketing analysis has been the inability to estimate the percentage of all kinds of foods or of a particular food consumed in the types of institutions under discussion. A significant gap also exists in the knowledge of the structure of demand for fresh and processed foods. Although primarily a case study, this report supplies some quantitative data concerning the institutional market.

METHODOLOGY

Data for this report were obtained from an overall study on the use of proteins and other foods in institutional diets. Information was derived from case studies of 16 non-Federal institutions--penal, charitable, and mental--located in the northeastern and southeastern regions of the United States. It was believed that these two regions would indicate greater differences in food consumption habits than any other two regions in the country. Institutional populations comparable in size and type were selected in both regions. Those studied were 3 mental institutions, 5 homes for the aged, 4 homes for children, and 4 penal institutions. Populations in the selected institutions ranged from 80 to more than 10,000 persons. These included inmates confined and institutional staff members.

Because of the small number of institutions studied and their nonrandom selection, the findings are not applicable to the total institutional population of the country. However, the institutions were selected in such a manner that it is believed these case studies are somewhat indicative of the general resident institutional population in the Northeast and Southeast.

Data were collected from each of the 16 institutions during 28 consecutive days in winter and a like number in summer. Not all institutions were studied for the same 28 days but were staggered over a given seasonal period. The winter period was established for the Southeast as January and February 1952, and for the Northeast as January, February, and March, 1952. The summer period covered an identical time span in both regions--July, August, and September, 1952.

Food available for consumption in each institution was determined by obtaining the daily record of food issued to the kitchen, plus inventory at the beginning of the period, minus inventory at the end of the period.[5] The supply of food issued to the kitchens was divided into 12 major categories (appendix, page 30).[6] These food issues are not precise measures of actual inmate consumption. Between issuance of food to the kitchens and consumption by inmates, certain factors may contribute to quantity changes which result from normal operation, such as refuse loss in preparation, and plate waste. In addition, spoilage, unauthorized feeding, and pilferage contribute to differences between quantities of food issued and those eaten. A study currently under way will attempt to show the quantity difference between food issued to the kitchens and food consumed by inmates.[7]

In this study of the market for food in charitable, mental and penal institutions emphasis was placed on quantities of food issued to kitchens in terms of market potentials for different food types and for some of the more important individual foods. To check on the adequacy of food used by these 16 non-Federal institutions, a nutritional evaluation of the food quantities issued will be made in a companion study currently under way as a cooperative project between the Market Development Branch of the Agricultural Marketing Service and the Home Economics Research Branch of the Agricultural Research Service.

In the present analysis, foods in all groups with the exception of eggs and dairy products were converted to a pound basis. Dairy products (milk, cheese, and ice-cream) were converted to a fluid milk quart equivalent (protein and mineral content). Eggs were measured in terms of numbers.[8]

Just as the food data were adjusted to a pound, quart, or number basis, price data collected on each food also were converted to comparable units. Food bought by an institution in a commercial outlet was assigned the price paid. Items that were produced at the institution, obtained through a Government distribution program, or donated, were valued at current market prices, either wholesale or retail, depending upon the institution's purchase pattern. The wholesale market price was determined by averaging prevailing prices obtained from wholesalers in the area during the given period.

---

[5] Throughout this report the term "food issued" is used specifically to refer to food issued to the kitchens in the institutions studied.

[6] The food groups were grouped as follows: (1) milk, cream, ice-cream and cheese; (2) eggs; (3) meat, poultry, and fish; (4) fats and oils; (5) dry beans, peas and nuts; (6) potatoes and sweetpotatoes; (7) citrus fruits and tomatoes; (8) leafy, green, and yellow vegetables; (9) other vegetables and fruit; (10) flour, cereals and baked goods; (11) sugar and sweets; (12) miscellaneous.

[7] An analysis is being undertaken of the food issues, losses, and nutrient content of diets in four of the institutions included in this report. This study is being done by the Home Economics Research Branch, Agricultural Research Service.

[8] Dried eggs were converted and measured on a shell equivalent basis.

Additional data were collected from each institution concerning food purchasing practices and sources of supply.

SURVEY FINDINGS

Food Purchasing Practices

In the larger institutions studied, both public and private, buying of food was the responsibility of the purchasing officer. Among the smaller ones, buying was done by superintendents, dietitians, head cooks, or others so designated.

The methods of buying were: (1) day-to-day purchases on the open market; (2) formal or informal competitive bid buying; and (3) advance contract. Several institutions used a combination of methods depending upon the kind of food. Staple food items bought in large quantities frequently were acquired through competitive bids, while fresh fruits and vegetables often were bought on a day-to-day or week-to-week basis. Some institutions had an advance contract with a wholesaler, broker, or producer to supply given quantities of food such as milk at stated intervals and predetermined prices.

Day-to-Day Purchases

Private institutions usually bought on a day-to-day basis. Very seldom did they report buying by competitive bids or advance contracts. Lack of storage and freezer space and the fact that relatively small quantities of food were purchased at one time were the chief reasons given for day-to-day buying.

Public institutions did some day-to-day buying within prescribed limits by getting informal price quotations from one or more sources of supply before placing orders.

Formal or Informal Competitive Bid Buying

Formal competitive bid buying involves circularizing suppliers with specifications and receiving sealed bids. Under the informal method, bids are sought verbally. Private institutions bought largely on a day-to-day basis, while public ones bought a large part of required food, chiefly manufactured and processed foods, by formal or informal bids. Competitive bidding usually permitted buying at the lowest possible prices. In the case of public institutions, competitive bid buying eliminated favoritism toward suppliers.

Advance Contract

Some of the institutions made advance contracts for a food such as fluid whole milk. Supplies of fruits and vegetables for processing by the institution were sometimes contracted for in advance with local producers. Some of these contracts were written, others verbal. In the case of public institutions, contracts were controlled by State regulations.

THE MARKET POTENTIAL FOR FOOD IN INSTITUTIONS

The purpose of this analysis was to obtain an indication of the market potential for foods in the institutions studied. To arrive at a measure of such a potential market, a quantitative base for comparison was necessary. Although many combinations of food can provide adequate meals, in this comparison the low-cost food plans developed for institutional use by the Home Economics Research Branch of the Agricultural Research Service were used as a point of reference.[9] Quantities set forth in these food plans may be described as a practicable guide, often used in developing institutional feeding programs. Quantities of food suggested in these plans provide nutrients recommended in

[9] Lifquist, Rosalind C. and Tate, Edith B., Planning Food for Institutions. Agriculture Handbook No. 16, BHNHE, U. S. Department of Agriculture, January 1951, pp. 40-41.

1948 by the National Research Council for individuals of different ages and with varying amounts of physical activity, if usual meal patterns are followed.[10] Two plans, one at moderate and one at low cost, were available for use. Because the institutions studied had quite limited amounts of funds budgeted for food, the low-cost plans were thought to be a more realistic base for comparisons.

From the data collected in these institutions during two 4-week periods, annual per capita issues of each food and groups of similar foods were derived.[11] These were compared with the quantities of respective food groups suggested in the food plans which had been weighted by the age and activity levels of the inmates in the institutions.[12]

In the analysis, each food group is considered separately in the discussion of market potentials for the 16 non-Federal institutions. The quantity suggested for each food group is considered in relation to the quantities of all food comprising the total diet. As the quantity suggested for each food group is only one of many combinations that provide a good diet, it should not be construed as a recommendation for a specific group in the institutional population. The suggested and the actual issue levels for each of 11 groups of food are shown on an annual basis (table 2).

Milk, Cream, and Cheese

When the various dairy products were converted to a fluid milk equivalent based on mineral and protein content, issues in most types of institutions except mental institutions were found to equal or exceed suggested levels (table 3). Mental institutions in the Northeast approached more nearly the quantity suggested than did the one in the Southeast. In this latter area, where fluid milk is not as readily available as in other areas, inmates in the mental institution studied were receiving only a little more than half of the suggested amount.

In order to reach the suggested quantity, each inmate would have to be issued annually approximately 110 additional quarts or its equivalent in cheese, ice cream, or other forms of milk. For example, if an institution's population averaged 5,000 inmates per day (and many of these institutions are larger), it would take an additional 138,000 gallons a year on a fluid milk basis to supply the quantity suggested under a low-cost food plan. This would increase expenditures if no other changes were made. In some instances, an increase may be justified in the interest of better diets. However, dry milk solids, which are less expensive, might be used to supplement this required amount. The mental institution in the Southeast did use some solids satisfactorily during the 28-day period.

Fluid milk constituted the major part of the total dairy products issued in all institutions (appendix, table 17). Skim milk and buttermilk were relatively more important in the Southeast than in Northeast institutions due to their widespread use in making hot breads. Dried milk products were made available to charitable and mental institutions

[10] The National Research Council, a nongovernmental agency, is a cooperative organization of scientific men of America. Its essential purpose is the promotion of scientific research and of the application and dissemination of scientific knowledge for the benefit of the national strength and well-being. The council was established at the request of the President of the United States, by the National Academy of Sciences, under its congressional charter to coordinate the research facilities of the country for work on military problems involving scientific knowledge.

[11] Data for estimated yearly issue of food per inmate in the institutions were based on a summer period, in the Southeast, from May 15 through September 30, and a winter period from October 1 through May 14; in the Northeast, a summer period from June 1 through September 30, and a winter period from October 1 through May 31.

[12] The suggested inmate per capita food issue data also were projected from a weekly to an annual basis.

TABLE 2.--Suggested and actual quantities per capita of each food group issued annually to selected types of institutional kitchens, by geographic regions

Food groups	Homes for the aged			Mental institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast
	Quarts	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*
Milk, Cream and Cheese[3]	261	261	305	265	155	228
	Number	*Number*	*Number*	*Number*	*Number*	*Number*
Eggs[4]	239	301	200	283	266	306
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Meat, poultry, and fish	141	134	108	142	151	150
Fats and oils	37	45	18	49	54	41
Dry beans, peas, and nuts	9	24	15	14	4	24
Potatoes and sweet-potatoes	146	63	194	165	93	167
Citrus fruit, tomatoes	145	105	180	149	66	167
Leafy, green, and yellow vegetables	127	114	53	125	105	152
Other vegetables and fruits	131	132	133	138	137	181
Flour, cereals, and baked goods	152	165	133	185	200	199
Sugar and sweets	36	58	58	45	72	64

See footnotes at end of table.

TABLE 2.--Suggested and actual quantities per capita of each food group issued annually to selected types of institutional kitchens, by geographic regions--Continued

Food groups	Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast
	Quarts	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*
Milk, Cream and Cheese[3]..	296	375	388	300	460	427
	Number	*Number*	*Number*	*Number*	*Number*	*Number*
Eggs[4].....	307	415	402	310	208	539
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Meat, poultry and fish...	126	99	198	142	198	204
Fats and oils.....	39	41	40	60	49	52
Dry beans, peas, and nuts	13	23	18	21	41	31
Potatoes and sweet-potatoes.....	138	81	198	197	106	244
Citrus fruit, tomatoes...	141	139	179	161	183	240
Leafy, green, and yellow vegetables.....	113	70	129	130	227	196
Other vegetables and fruits.....	125	167	274	155	217	273
Flour, cereals, and baked goods.....	155	113	121	231	267	257
Sugar and sweets.....	40	69	77	54	85	152

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

[3] Quarts, fluid milk equivalent (protein and mineral content).

[4] Number, shell equivalent.

TABLE 3.--Suggested and actual quantities per capita of milk, cream, and cheese products issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Quarts	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*	*Quarts*
Fluid	183	188	255	186	72	154	207	328	352	210	261	311
Skim and buttermilk	41	30	14	41	0	20	46	18	(4)	47	62	0
Evaporated and condensed	15	7	14	16	5	18	17	3	2	18	6	52
Dried: whole and skim	2	10	1	2	48	14	3	10	0	3	85	40
Cream	7	0	(4)	7	0	1	8	(4)	1	8	(4)	2
Cottage cheese	2	(4)	(4)	2	0	(4)	2	1	3	2	0	(4)
Other cheese	4	17	10	4	28	11	5	13	17	5	46	16
Ice cream	7	9	8	7	2	10	8	2	13	7	(4)	6
Total	261	261	302	265	155	228	296	375	388	300	460	427

[1] Milk equivalent basis (protein and mineral content).

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data

[4] Less than 0.5 quart.

in both regions through Government distribution programs. Substantial quantities of non fat dried milk solids were used in mental and penal institutions, especially in the Southeast.

In contrast, less use of this product was found in the Northeast institutions. A part of the regional difference in the use of the dried product may be attributed to the scarcity of fluid milk in certain areas of the Southeast during the fall and winter seasons. Cheese and cheese products constituted an important part of the total dairy products issued mental and penal institutions in the Southeast.

Eggs

A part of the institutional population studied was not being issued eggs in an amount equal to that suggested in the low-cost food plans (table 4). This was true of inmates in mental and correctional institutions in the Southeast and of residents of homes for the aged in the Northeast. To reach the suggested quantity, residents of homes for the aged in the Northeast would require about an additional three dozen eggs annually per capita, inmates of penal institutions in the Southeast about nine dozen, and inmates in mental institutions in this same region approximately one and one-half dozen.

Though the number of eggs issued per mental inmate seems to be rather small, it should be remembered that this type of institution constitutes about two-fifths of the inmate population. If a similar condition prevails in all of this type, the market potential may be of interest to local producers. Additional utilization of eggs in this market outlet might be in the form of dried whole eggs. Some institutions studied had acquired experience in the use of the dried product and reported it to be an important supplement in this food group. Practically all dried eggs used were Government-issued.

Recent technological developments have improved the palatability and increased the storage life of dried eggs.[13] In most institutions they constituted roughly 8 to 13 percent, on a shell equivalent basis, of the total eggs issued (appendix, table 18). In one home for children in the Southeast, the dried product which was received through the Government distribution program, constituted more than a third of the total issue of eggs on a shell equivalent basis.

Meat, Poultry, and Fish

The annual per capita quantity of meat, poultry, and fish suggested in the low-cost plans was 142 pounds for inmates in homes for the aged and mental and penal institutions (table 5).[14] For these particular types of institutions, actual per capita issues ranged from 108 pounds to 204 pounds. The greatest difference between the suggested quantities and actual issues was for residents in the homes for the aged, particularly in the Northeast. One of the children's homes in the Southeast also was issued considerably less than the suggested quantity. In mental and penal institutions, in both regions and homes for children in the Northeast, the actual level of issue of meat, poultry, and fish exceeded the suggested levels.

Within this food group--meat, poultry, and fish--beef represented the largest proportion being issued, more than one-third of the total for the group (appendix, table 19). Issuance of beef at less than that suggested in the low-cost food plan was most pronounced in homes for children in the Southeast. The use of pork in institutions in the Southeast was in keeping with the pattern believed to prevail among the population in that region. Considerable quantities of poultry and fish were used in these institutions. In penal and mental institutions, in both regions, poultry was used in smaller quantities than national averages. On the other hand, actual issue of fish usually exceeded the level.

---

[13] How Agricultural Research Is Meeting the Challenge of Surpluses, a talk by G. E. Hilbert, Director of Utilization Research, ARS, U. S. Department of Agriculture, April 6, 1954.

[14] Meats were measured in terms of dressed carcass weights, poultry on an eviscerated basis, and fish on edible portion.

TABLE 4.--Suggested and actual quantities per capita of eggs issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Number	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Eggs.....	239	301	200	283	266	306	310	415	402	307	208	539

[1] Shell equivalent basis.

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

TABLE 5.--Suggested and actual quantities per capita of meat, poultry, and fish issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Beef	45	46	42	45	62	56	40	26	73	45	87	76
Veal	8	2	1	8	0	2	7	0	19	8	22	8
Lamb	4	2	5	4	0	3	3	0	11	4	0	7
Pork	39	41	21	40	54	42	35	43	45	40	55	63
Edible offals	11	4	2	11	3	3	10	4	4	11	8	9
Poultry	24	25	21	24	18	15	22	22	20	24	10	11
Fish	10	14	16	10	14	29	9	4	26	10	16	30
Total	141	134	108	142	151	150	126	99	198	142	198	204

[1] Retail weight equivalent basis.

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

While a few of these institutions did not issue the quantity of meat, poultry, and fish suggested in the low-cost plans, most of them exceeded it, some by more than 50 percent.

Fats and Oils

A comparison between the actual and suggested levels of issue of fats and oils revealed the greatest variance in homes for the aged in the Northeast and penal institutions in the Southeast (table 6).

The extent to which institutions in the Southeast met the suggested level of quantities in the low-cost food plan for fats and oils was due largely to the greater amount of bacon and salt pork issued in that area than in the Northeast (table 6). In penal institutions in the Southeast, however, the issue of bacon and salt pork did not bring the use of fats and oils to the suggested level in the low-cost food plan.

When the amounts of butter and oleomargarine were combined, totals showed, with one exception, that inmates were being issued approximately the suggested amounts for these table fats in the low-cost food plan. The one exception was the mental institution in the Southeast. In most of these institutions, margarine made up about 80 percent or more of the table fat used.

Lard and other shortening furnished a larger proportion of the fats and oils in penal institutions than in the other types of institutions studied.

Although small amounts of salad and cooking oils and mayonnaise and salad dressings were called for under the low-cost plan for mental institutions, even smaller quantities were generally being issued.

There is some potential for expanding the utilization of butter provided it could be obtained at a cost closer to the cost of substitute products.

Dry Beans, Peas, and Nuts

The actual annual per capita issue of dry beans, peas, and nuts exceeded suggested quantities in all except the mental institution in the Southeast (table 7).[15] This relatively high level of utilization was attributed to the fact that food in this group is inexpensive and is easily prepared for mass feeding.

Except for the mental institution in the Southeast, dry beans, including limas, were the most important food item in this category from the standpoint of quantities issued. Little use was made of peanuts or tree nuts.

Potatoes and Sweetpotatoes

In the Northeast, actual per capita issue of potatoes surpassed the suggested quantity in the low-cost food plan (table 8). In contrast, the per capita issue of potatoes in the Southeast was below the suggested level. The high rate of use of potatoes in the Northeast is probably due to availability of large supplies, differences in the patterns of consumption within the region, and to product price.

With the exception of penal institutions in the Southeast, sweetpotato use in institutions in both regions was below average use in the United States. However, the relatively high price per pound for sweetpotatoes during the period in which these data were collected undoubtedly affected the issue of this food. When sweetpotatoes were used, a major percentage of the total issue was made in processed form. Although institutions in the Southeast appeared to represent a potential outlet for increased use of potatoes, this might not be the case because of the popularity of grits and rice in some parts of this region.

[15] Dry beans, peas, and nuts were measured on a cleaned basis.

TABLE 6.--Suggested and actual quantities per capita of fats and oils issued annually to selected types of institutional kitchens, by products and geographic regions

Product	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Butter	6	1	2	7	([3])	1	6	3	4	9	2	2
Margarine	3	12	10	5	9	23	4	11	15	6	14	28
Bacon	7	16	0	10	15	5	8	8	6	12	9	4
Lard and other shortening	13	6	3	17	3	9	13	10	7	21	16	34
Salad, cooking oil, and mayonaise, and salad dressing	4	8	2	5	1	2	4	7	5	6	2	7
Salt pork	4	2	1	5	26	1	4	2	2	6	6	2
Total	37	45	18	49	54	41	39	41	39	60	49	77

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

[3] Less than 0.5 pound.

TABLE 7.--Suggested and actual quantities per capita of dry beans, peas, and nuts issued annually to selected types of institutional kitchens, by products and geographic regions

Product	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Beans, including limas.....	4	17	12	7	0	19	6	6	12	10	28	21
Peas, lentils.....	1	5	2	1	4	4	1	8	1	1	11	4
Nuts[3].....	4	2	1	6	0	1	6	9	5	10	2	6
Total.....	9	24	15	14	4	24	13	23	18	21	41	31

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

[3] Includes peanut butter.

TABLE 8.--Suggested and actual quantities per capita of potatoes and sweetpotatoes issued annually to selected types of institutional kitchens, by products and geographic regions

Product	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
Potatoes and sweetpotatoes	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Potatoes (white).....	129	50	194	146	82	167	123	75	198	175	85	244
Sweetpotatoes												
Fresh.....	16	7	0	18	3	0	15	0	0	21	8	0
Processed.....	1	6	([3])	1	8	0	([3])	6	0	1	13	0
Total.....	146	63	194	165	93	167	138	81	198	197	106	244

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

[3] Less than 0.5 pound.

Citrus Fruits and Tomatoes

The institutions in which issue of citrus fruits was less than the suggested quantities were the homes for the aged and the mental institution in the Southeast (table 9).[16] This condition was not offset by the use of more tomatoes or other foods high in Vitamin C. Utilization of citrus fruits in processed form was much greater in the Southeast than in the Northeast (appendix, table 20).

Use of processed citrus fruits rather than fresh citrus in the Southeast institutions can be attributed to differences in cost for equivalent quantities. This is perhaps due to more stringent budget limitations for institutions in the Southeast. This factor also makes the Southeast institutions more eligible for receiving processed citrus products through Government distribution programs.[17] The particular processed citrus items used most frequently were single-strength juice and 65-degrees-brix[18] concentrated juices. The use of frozen concentrated juices was negligible.

In homes for the aged, the mental institution, and homes for children in the Southeast, tomatoes were not being issued at suggested levels, while institutions in the Northeast issued them at a suggested level rate. More than half of the tomatoes used in all institutions in both regions were processed because they were low in price and could be easily stored.

If these products were supplied at the level suggested in the low-cost food plan, mental institutions in the Southeast could utilize an additional half box of citrus fruits per inmate annually in order to meet the suggested level.[19] Assuming an average of between 1600 and 2000 inmates, this would mean about 800 to 1000 boxes of additional consumption per year in each institution. An additional 32 pounds of tomatoes per year could be utilized per capita, or about 1400 cases of #10 cans. From these data, there appears to be some possibility of expanding the market for these two products within the institutional outlet in the Southeast.

Leafy, Green, and Yellow Vegetables

In the Southeast, quantities of leafy, green, and yellow vegetables issued to homes for the aged, mental institutions, and homes for children were smaller than those suggested in the low-cost food plan (table 10). The only type of institution in the Northeast which issued less than suggested was homes for the aged. The greatest differences were found in children's homes in the Southeast and homes for the aged in the Northeast.

With the exception of homes for the aged in the Northeast, most of the leafy, green, and yellow vegetables were issued in fresh form (appendix, table 21). Turnip greens, cabbage, and green beans were the principal items used in the Southeast; in the Northeast, carrots and cabbage were the major items. These foods, if properly cooked and stored, would help to lessen the effect of lowered citrus fruit and tomato consumption.

The institutional market for leafy, green, and yellow vegetables is largely local in nature. A potential market for additional utilization of items in this food group prevails in institutions in the Southeast, since kitchen issues were below suggested levels. Local producers might find this type of outlet a profitable one.

---

[16] Citrus and tomatoes are measured on a fresh weight equivalent basis.

[17] The financial ability of an institution to provide inmates with adequate diets is considered when surplus commodities are allocated through a Government distribution program.

[18] 65-degrees-brix refers to solids content associated with sweetness of the juices.

[19] For oranges and grapefruit, the weight of a box of citrus will vary between 77 and 90 pounds, depending upon the area in which it is produced.

TABLE 9.--Suggested and actual quantities per capita of citrus fruit and tomatoes issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Citrus fruit.....	87	61	128	90	39	103	85	94	85	98	97	114
Tomatoes.....	58	44	52	59	27	64	56	45	94	63	86	126
Total.....	145	105	180	149	66	167	141	139	179	161	183	240

[1] Fresh equivalent basis.

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

TABLE 10.--Suggested and actual quantities per capita of leafy, green, and yellow vegetables issued annually to selected types of institutional kitchens, by products and geographic regions

Product	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Fresh	108	76	23	106	92	118	96	47	94	111	183	113
Processed	19	38	30	19	13	34	17	23	35	19	44	83
Total	127	114	53	125	105	152	113	70	129	130	227	196

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

Other Vegetables and Fruits

Other vegetables and fruit encompass all vegetables other than leafy, green, and yellow, tomatoes and potatoes and all fruits (other than citrus), including bananas, pineapples, and melons (appendix, table 22). The per capita issue of this group in all types of institutions in both regions was equal to or exceeded the suggested levels (table 11).

Vegetables in this category were utilized in processed form to a greater extent than were those in the leafy, green, and yellow vegetable group (appendix, tables 20 and 21). Even so, a considerable amount of vegetables in the "other vegetable" class was used as fresh produce.

From these data there appears little opportunity for moving additional quantities of the items in this food group--beets, sweet corn, egg-plant, onions, and celery--into institutional use if low-cost budgets are maintained.

Flour, Cereals, and Baked Goods

In homes for children in both regions, less flour and fewer cereal products were used than suggested in the food plans. Within this food group, there were regional differences as to whether more or less of specific items were issued than suggested in the food plans (table 12). For example, in all institutions in the Southeast the amount of corn meal issued was above the suggested level and below it in all of the Northeast institutions. Cereals constituted from 14 to 29 percent of this food group utilized in all institutions in both regions (appendix, table 23). For all cereals taken as a group, smaller amounts than suggested were issued in homes for children in the Southeast.

On the basis of these data there may be some likelihood of expanding the market for flour and cereal products in homes for children in both regions. This likelihood might not be so great in the Northeast because of the large amount of potatoes used in that region.

Mental institutions which presently comprise about two-fifths of the institutional population were generally using large quantities of this product.

Sugar and Sweets

In all 16 institutions studied in both regions the utilization of sugar and sugar products exceeded the level suggested in a low-cost food plan (table 13). Institutions in the Northeast used more sugar than did their counterparts in the Southeast. In the latter regions, however, the relatively low issuance of sugar was supplemented by large quantities of sirup, molasses, and honey.

There does not appear to be any great likelihood of expanding the market for sugar and sirups in the institutional outlets studied.

MONEY VALUE OF FOOD USED IN INSTITUTIONS

Analysis of the average money value of foods issued per person per day, based on 28 days during the summer and 28 days in winter, showed a wide range between types of institutions (table 14). Taking individual institutions within the case study group, the range in the daily per capita money value of food issued was largest in the Northeast region. During a 28-day summer period, the daily per capita value of food varied from a low of 48 cents in a mental institution in the Northeast to a high of $1.04 in a penal institution. In the 28-day winter period, the range was somewhat reduced, varying from 53 cents in a home for the aged to 98 cents in a penal institution. In the Southeast, the per capita money value of food issued ranged from 48 cents in a home for the aged to 90 cents in a correctional institution during the summer period. A similar range in the

TABLE 11.--Suggested and actual quantities per capita of other vegetables and fruits issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
Other vegetables and fruits	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Vegetables:												
Fresh	39	22	27	41	16	59	37	18	97	46	70	134
Canned	12	20	22	13	3	33	11	24	36	15	22	50
Fruits:												
Fresh	63	19	47	66	53	45	60	88	100	74	55	53
Canned	10	55	22	11	53	26	10	29	32	12	47	22
Juice	5	3	8	5	2	7	5	3	3	5	1	3
Dried	2	13	7	2	10	11	2	5	6	3	22	11
Total	131	132	133	138	137	181	125	167	274	155	217	273

[1] Processed products in this food group were not placed on a fresh equivalent basis because suggested quantities used for comparative purposes did not lend themselves to this conversion.

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

TABLE 12.--Suggested and actual quantities per capita of flour, cereals, and baked goods issued annually to selected types of institutional kitchens, by products and geographic regions

Product[1]	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]		Suggested[2]	Actual[3]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
Flour and cereal products	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Flour	115	99	102	141	107	138	120	77	92	176	123	194
Cornmeal	16	28	1	18	42	9	16	20	4	22	107	6
Cereals[4]	21	41	38	26	51	52	23	16	25	33	37	53
Total	152	168	141	185	200	199	159	113	121	231	267	253

[1] Baked goods were converted to a flour equivalent basis.

[2] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[3] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

[4] Includes grits and rice.

TABLE 13.--Suggested and actual quantities per capita of sugar and sweets issued annually to selected types of institutional kitchens, by products and geographic regions

Product	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]		Suggested[1]	Actual[2]	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
Sugar and sweets	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Sugar	21	28	40	26	46	48	24	32	47	32	24	117
Sirups	3	17	7	4	19	8	3	11	6	5	58	22
Other sweets	12	13	11	15	7	8	13	26	24	17	3	13
Total	36	58	58	45	72	64	40	69	77	54	85	152

[1] To obtain suggested food group quantities for these institutions the quantities given in low-cost food plans (Planning Food for Institutions, p. 46) for the different age and activity levels were weighted by the percentage distribution of inmates in the respective age and activity levels who were in residence in the institution at the time the study was made. The method used is given on pp. 17-18 of the above publication.

Quantities shown for individual commodities were derived by applying to these total food group quantities the percentage distribution of food items as found in the Agricultural Marketing Service estimates of the nationwide use of food. The percentages used are given in Planning Food for Institutions, pp. 33-37.

[2] Actual per capita issues in institutions in each region were weighted by seasonal periods to yield an annual figure; case-study data.

per capita food values prevailed in the same institutions during the winter period. Considering all institutions studied, the lowest per capita money value of food issued was found in mental institutions and homes for the aged.

Table 14.--Percentage distribution of the daily range in money value of food used in 16 non-Federal institutions during 28 days each--in summer and winter

Daily range in money value of food	Summer	Winter
Cents	*Percent*	*Percent*
40-49	31	31
60-79	38	50
80-99	19	19
100 and over	12	--

The variation in per capita value between regions may be due to two factors: The financial ability of public and private institutions to provide for inmate population is perhaps foremost in importance; and demands for particular food items that are unique to a region--cornmeal and pork in the Southeast--may account in part for regional differences in the money value of food per inmate.

DISTRIBUTION OF MONEY VALUES AMONG FOOD GROUPS

Another way to evaluate the money value for food issued in these institutions is to compare their value throughout the food groups with the distribution of values called for by the suggested low-cost plan (table 14). In making this analysis, identical prices (those being paid by these institutions) were applied to actual and suggested issue levels for given food items.[20] In this analysis, appropriate wholesale or retail prices were assigned to food obtained as gifts through Government distribution programs or produced on institutional farms. The particular situation looked for was the case in which a type of institution used a larger quantity than called for of a certain food in the low-cost food plan, when at the same time there was an insufficient amount of another food type being utilized.

When studied for this purpose, the institutions fell into three categories which can be described as follows:

1. The excess money value represented in overissued food groups was greater than the additional money value needed to bring underissued food groups up to the suggested levels under a low-cost plan. For such institutions excess money values for food groups being overissued might well be shifted to those which are being underissued with possible savings on total expenditures for food. The penal institutions and the homes for the aged studied in the Southeast represented this pattern. In homes for the aged in this region, some foods were being utilized in quantities which exceeded that suggested in the low-cost food plan. This excess accounted for about 8 cents out of every food dollar. In contrast, other foods were not being issued to the levels suggested in the low-cost plan. To bring these into line with the plan would require 4 cents out of every food dollar. Thus, the homes for the aged could realize a saving of 4 cents out of every food dollar by adjusting all food groups to the low-cost food plan.

2. The excess money value for overissued food groups was approximately equal to the additional value needed to bring underissued food groups to the suggested

[20] For this comparison, the average price per pound for each type of food--meat, dairy products, leafy, green, and yellow vegetables--as paid by these institutions was applied to the quantities of the respective food groups in the low-cost food plan.

TABLE 15.--Percentage distribution of suggested and actual quantity and expenditures for food, by major food groups, type of institution, and geographic region

Food group[1]	Quantity purchases											
	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested	Actual		Suggested	Actual		Suggested	Actual		Suggested	Actual	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Milk, cream and cheese.....	37	36	40	35	16	25	41	47	38	35	35	30
Eggs.....	2	3	2	2	3	2	2	2	2	2	1	2
Meat, poultry, and fish.....	9	9	7	9	13	9	8	6	9	8	9	8
Fats and oils.....	2	3	1	3	5	3	3	3	2	3	2	3
Dry beans, peas, nuts.....	1	2	1	1	0	2	1	2	1	1	2	1
Potatoes and sweetpotatoes....	10	4	12	10	8	10	9	5	10	11	5	9
Citrus fruit and tomatoes.....	8	5	8	7	3	6	7	6	6	7	6	6
Leafy, green, and yellow vegetables.....	8	8	4	8	9	9	7	4	6	7	12	8
Other vegetables and fruits...	9	10	9	8	12	12	8	11	13	8	10	12
Flour, cereals, and baked goods	10	14	11	12	22	16	10	9	8	13	13	12
Sugar and sweets.....	2	4	4	3	7	4	3	4	4	3	4	6
Miscellaneous.....	2	2	1	2	2	2	1	1	1	2	1	3
Total.....	100	100	100	100	100	100	100	100	100	100	100	100

See footnote at end of table.

TABLE 15.--Percentage distribution of suggested and actual quantity and expenditures for food, by major food groups, type of institution, and geographic region--Continued

Food group[1]	Money values											
	Homes for the aged			Mental institutions			Homes for children			Penal institutions		
	Suggested	Actual		Suggested	Actual		Suggested	Actual		Suggested	Actual	
		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast		Southeast	Northeast
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Milk, cream and cheese.....	26	25	29	25	12	17	29	31	27	26	26	21
Eggs.....	5	6	4	6	8	5	6	8	.5	5	3	6
Meat, poultry, and fish.....	29	24	27	28	30	30	28	21	31	26	31	26
Fats and oils.....	4	6	2	5	4	4	5	6	4	5	4	5
Dry beans, peas, nuts.....	1	1	1	1	0	3	1	2	1	1	2	1
Potatoes and sweetpotatoes....	3	2	4	4	2	4	3	2	4	5	3	3
Citrus fruit and tomatoes.....	4	3	5	4	2	4	4	4	4	4	4	4
Leafy, green and yellow vegetables.....	7	6	3	5	5	5	5	3	4	5	7	5
Other vegetables and fruits...	7	8	8	6	9	9	5	6	8	6	8	7
Flour, cereals and baked goods.	8	11	10	9	17	11	10	10	7	9	7	9
Sugar and sweets.....	2	4	3	2	6	3	2	5	3	2	4	4
Miscellaneous.....	4	4	4	5	5	5	2	2	2	6	1	9
Total.....	100	100	100	100	100	100	100	100	100	100	100	100

[1] All food groups were converted to a pound basis in order to compare the suggested with the actual issue for each food group.

levels in the low-cost plan. In the institutions in this category, bringing all food groups into line with the suggested plan might not represent food dollar savings, but the inmates might have available to them a better balanced diet. Of the institutions studied, those which represented this pattern were mental institutions in the Southeast and homes for children in the Northeast.

3. The excess money value represented in overissued food groups was less than the additional value needed to bring underissued food groups up to the suggested levels in the low-cost plan. In these cases, shifting of funds from overissued items would not make up the deficit for the underissued food groups, but the problem might be somewhat eased. This circumstance was found in the homes for the aged, mental institutions, and penal institutions in the Northeast and homes for children in the Southeast. As more is learned of inadequacies in institutional diets, the food budgets of institutions are likely to be revised upward to overcome such deficiencies.

SOURCES OF SUPPLY

The mental, charitable, and penal institutions studied acquired their food supply from three principal sources--commercial markets, owned farms, and food obtained through Government distribution programs and by gifts from private donors and religious foundations (table 16). Most institutions received food from more than one source, but they differed widely in the amounts received from a particular source.

Homes for the Aged

In homes for the aged in both regions, about four-fifths of the food was bought in the commercial market. The regions differ in that those institutions in the Southeast receive a larger proportion of their food through Government distribution programs. The major items that homes for the aged in the Southeast received through the Government distribution program were dried milk and citrus fruit juices. The primary foods produced on institutional farms were whole milk and other dairy products.

Mental Institutions

In both regions the primary source of food was buying through commercial channels. In each region about 25 percent of the food was produced on institutional farms. In the Southeast about 61 percent of the eggs and nearly 47 percent of the vegetables were produced on their farms; in addition, about 25 percent of the flour and cereal products was produced on these farms. In the Northeast, there were only two products that were institutionally produced in any considerable proportions--69 percent of the fluid milk and dairy products and about 35 percent of the leafy, green, and yellow vegetables. Less than 10 percent of the food used in these institutions in both regions came from Government distribution programs.

Homes for Children

In the Northeast, the larger part of the food used in all homes for children was purchased in the commercial market. On the other hand, one of the homes for children in the Southeast depended to a considerable extent upon food produced on the institutional farm, especially pork, poultry, milk, eggs, sweetpotatoes, and other vegetables. In the Southeast, a large part of the sugar and sweets (e. g., honey), dry beans, other vegetables and fruits, and some citrus juices were obtained from Government programs.

TABLE 16.--Percentage distribution of source of supply of food, by major food groups, type of institution, and geographic region

Food group	Quantities											
	Homes for the aged						Mental institutions					
	Southeast			Northeast			Southeast			Northeast		
	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Milk, cream and cheese.	52	23	26	58	42	(1)	13	83	4	26	69	5
Eggs	98	-	2	46	54	-	36	61	4	90	7	3
Meat, poultry, and fish	89	(1)	11	98	2	-	88	12	-	98	2	-
Fats and oils	96	3	1	96	4	-	100	(1)	-	95	5	-
Dry beans, peas, and nuts	100	-	-	100	-	-	100	-	-	96	-	4
Potatoes and sweet-potatoes	98	-	2	100	-	-	88	12	-	99	1	-
Citrus fruit and tomatoes	79	-	21	96	-	4	42	-	58	78	4	18
Leafy, green, and yellow vegetables	90	-	10	75	25	-	53	47	-	63	36	1
Flour, cereals, and baked goods	100	-	(1)	100	-	(1)	76	24	-	100	-	-
Sugar and sweets	94	-	6	98	-	2	80	11	9	96	-	4
Miscellaneous	100	-	(1)	100	-	-	100	-	-	100	-	(1)
Average purchases by source	78	8	14	79	20	1	62	29	8	72	24	4

See footnote at end of table.

TABLE 16.--Percentage distribution of source of supply of food, by major food groups, type of institution and geographic region--Continued

Food group	Quantities											
	Homes for children						Penal institutions					
	Southeast			Northeast			Southeast			Northeast		
	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts	Bought	Produced at inst.	Government distribution program and gifts
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Milk, cream and cheese.	40	59	1	100	-	-	7	91	2	10	89	(1)
Eggs.....	43	46	11	100	-	(1)	98	-	2	71	28	(1)
Meat, poultry, and fish	31	66	3	99	1	(1)	93	7	-	92	8	-
Fats and oils.....	54	46	(1)	100	-	(1)	95	5	-	94	6	-
Dry beans, peas, and nuts.....	41	3	56	99	-	1	99	1	-	100	-	-
Potatoes and sweet-potatoes.....	65	31	4	89	11	(1)	64	36	-	100	-	-
Citrus fruit and tomatoes.....	64	-	36	96	(1)	4	89	(1)	11	93	5	2
Leafy, green, and yellow vegetables....	56	23	22	79	20	(1)	66	34	(1)	67	33	-
Flour, cereals, and baked goods.....	58	20	22	99	-	(1)	63	37	-	100	-	-
Sugar and sweets.....	32	-	68	98	-	2	88	-	12	99	-	1
Miscellaneous.....	100	-	-	100	-	-	100	-	-	100	-	-
Average purchases by source.....	48	39	13	95	4	1	52	45	2	65	35	(1)

[1] 0.5 percent or less.

Penal Institutions

The highest percentage of institution produced foods found among institutions surveyed occurred in penal institutions in both regions.[21] Penal institutions in both regions bought the major part of their food from commercial sources. In three out of four institutions in the Northeast and Southeast, about 90 percent of the milk and 30 percent of the vegetables were produced on institutional farms. The Southeast depended more upon institution produced flour and cereal products and sweetpotatoes than did the Northeast. Penal institutions in the latter region relied more upon production of eggs on their farms than did those in the Southeast.

[21] Adult inmates of penal institutions are usually declared ineligible to receive food through government distribution programs, although correctional homes for delinquent boys and girls have received food from this source.

APPENDIX

A Listing of Foods by Major Food Groups With Subgroupings Under Each Category

Milk, cream, and cheese:
- Milk:
  - Fluid Milk
  - Buttermilk, skim milk including skim milk used in chocolate drinks
  - Evaporated and condensed unsweetened
  - Condensed sweetened
  - Dry skim and buttermilk
  - Dry whey
  - Dry whole
  - Malted
- Cream, 25 percent
- Cheese:
  - Cheddar
  - Cottage
- Ice cream:
  - Whole milk
  - 35 percent cream
- Frozen malted and custard
- Ice Milk
- Sherbert

Eggs

Meat, poultry, and fish:
- Meat, carcass:
  - Beef
  - Lamb and mutton
  - Pork, lean meat
  - Veal
  - Offals, edible
- Poultry:
  - Chicken, dressed
  - Turkey, dressed
- Game
- Fish:
  - Fresh and frozen (dressed basis)
  - Shellfish, without shells
  - Cured
  - Canned:
    - Mackeral
    - Salmon
    - Sardines
    - Shrimp
    - Tuna

Fats and Oils:
- Bacon
- Butter
- Lard and other shortening
- Margarine, fortified
- Salad and cooking oil, mayonnaise
- Salt pork

Dry beans, peas, soya flour:
- Beans, including limas
- Peas
- Soya Flour, flakes, grits:
  - Low fat
  - Full fat

Nuts:
- Almonds, shelled
- Coconut, dry shredded
- Filberts, shelled
- Peanuts, shelled
- Pecans, shelled
- Treenuts, shelled
- Walnuts, shelled

Potatoes, sweetpotatoes:
- Potatoes, white
- Sweetpotatoes
- Sweetpotatoes, canned

Citrus fruit and tomatoes:
- Citrus fruit:
  - Fresh:
    - Grapefruit
    - Lemons
    - Limes
    - Oranges
    - Tangerines
  - Canned:
    - Citrus concentrates
    - Citrus juice combination
    - Grapefruit juice
    - Grapefruit segments
    - Lemon juice
    - Orange juice
    - Tangerine juice

Tomatoes:
- Fresh:
  - Tomatoes
- Canned:
  - Catsup and chili sauce

Tomatoes--Continued
Canned--Continued
Paste, puree and sauce
Soup
Tomato juice
Whole and pulp

Leafy, green, and yellow vegetables:
Fresh:
Artichokes, globe
Asparagus
Beans, lima, green
Beans, snap
Broccoli
Brussels sprouts
Cabbage
Carrots
Collards
Kale
Lettuce and escarole
Okra
Peas, green
Peppers
Pumpkin
Spinach
Squash, winter
Turnip greens

Canned:
Asparagus
Beans, lima
Beans, snap
Carrots
Peas
Pumpkin and squash
Spinach
Baby foods:
Carrots
Peas
Spinach

Frozen:
Asparagus
Beans, lima
Beans, snap
Broccoli
Brussels sprouts
Carrots, and carrots and peas
Peas, green
Pumpkin and squash
Spinach

Other vegetables and fruits:
Other vegetables:
Fresh:
Beets
Cauliflower
Celery
Corn, sweet
Cucumbers

Other vegetables and fruits--Continued
Other vegetables--Continued
Fresh--Continued
Eggplant
Onions
Parsnips
Radishes
Rhubarb
Squash, summer
Turnips and rutabagas

Canned:
Beets
Corn
Pickles, cucumbers
Sauerkraut
Soups (other than tomato)
Vegetable juice

Frozen:
Corn

Other fruits:
Fresh:
Apples
Apricots
Avocados
Bananas
Cherries
Cranberries
Grapes
Melons:
Cantaloup
Watermelon
Peaches
Pears
Pineapple
Plums and prunes
Strawberries

Canned fruit and fruit juices:
Apple juice
Apples and apple sauce
Apricots
Berries
Berry juice
Cherries
Cranberries
Figs
Fruit cocktail
Fruit nectar
Grape juice
Olives
Peaches
Pears
Pineapple juice
Pineapple
Plums and prunes
Prune juice
Baby food:
Apples

Other vegetables and fruits--Continued
Other fruits--Continued
Frozen:
Blueberries
Peaches
Strawberries

Dried:
Apples
Apricots
Dates
Figs
Peaches
Prunes
Raisins and currants

Flour, cereals, and baked goods:
Flour:
Wheat patent
Enriched
Unenriched
Whole wheat
Buckwheat
Rye, light

Cornmeal:
White, whole grain
Yellow, degerminated

Cornstarch

Cereals and cereal products:
Barley
Corn cereals, restored

Flour, cereals, and baked goods--Continued
Cereals and cereal products--Continued
Farina, enriched
Hominy grits
Macaroni, spaghetti
Oatmeal
Rice
Shredded wheat

Sugar, sweets:
Sugar
Sirups, molasses, honey
Other sweets[1]

Miscellaneous:
Beverages:
Coffee
Bean
Concentrate, substitute
Tea, mate

Leavening agents:
Baking powder
Baking soda
Cream of tartar

Seasoning:
Vinegar
Salt
Spices, herbs, flavors, extracts

Projecting Institutional Food Data Collected During Two 4-Week Periods to an Annual Basis

The per capita quantity of each food actually issued during each of the 28-day periods (summer and winter) was placed on a 7-day basis and projected to an annual figure. Issues of food were weighted by the appropriate number of weeks within the summer and winter seasons as defined for each region. The summer period in the Southeast was from May 15 through September 30; the winter period was from October 1 through May 14. In the Northeast, the summer period extended from June 1 through September 30 and the winter period from October 1 through May 31.

[1] Includes candy, jelly, jam, preserves, and prepared dry desserts.

Note: These data were obtained from the publication Planning Food for Institutions, by Rosalind C. Lifquist and Edith B. Tate, Bureau of Human Nutrition and Home Economics, U. S. Department of Agriculture, Agriculture Handbook No. 16, January 1951.

TABLE 17.--Dairy products: Percentage distribution of quantities issued, by major items, type of institution, and geographic region

Item[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fluid milk	72	83	47	68	87	91	57	73
Skim and buttermilk	11	5	0	9	5	(2)	13	0
Evaporated and condensed	3	5	3	8	1	1	1	12
Dried: whole and skim	4	(2)	31	6	3	0	19	9
Cream	0	(2)	0	(2)	(2)	(2)	(2)	(2)
Cottage cheese	(2)	1	0	(2)	(2)	1	0	(2)
Other cheese	7	3	18	5	3	4	10	4
Ice cream	3	3	1	4	1	3	(2)	2
Total	100	100	100	100	100	100	100	100

[1] All dairy products were converted to a fluid milk equivalent.
[2] Less than 0.5 percent.

TABLE 18.--Eggs: Percentage distribution of quantities issued by major items, type of institution, and geographic region

Item[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Shell eggs, fresh	91	98	93	68	66	100	93	78
Dried whole eggs	9	0	7	11	34	(2)	7	12
Frozen whole eggs	0	0	0	20	0	0	0	10
Frozen egg whites	0	2	0	1	0	0	0	0
Total	100	100	100	100	100	100	100	100

[1] Shell egg equivalent.
[2] Less than 0.5 percent.

TABLE 19.--Meat, poultry, and fish: Percentage distribution of quantities issued, by major items, type of institution and geographic region

Item	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Beef and veal	36	40	41	39	26	46	55	41
Lamb	1	5	0	2	0	6	0	4
Pork	31	19	36	28	44	23	28	31
Edible offals	3	2	2	2	4	2	4	4
Poultry	19	19	12	10	22	10	5	5
Fish	10	15	9	19	4	13	8	15
Total	100	100	100	100	100	100	100	100

TABLE 20.--Citrus fruit and tomatoes: Percentage distribution of quantities issued, by major items, type of institution, and geographic region

Form[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
Citrus	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fresh	28	52	13	65	57	82	61	80
Processed	72	48	87	35	43	18	39	20
Total	100	100	100	100	100	100	100	100
Tomatoes								
Fresh	18	2	22	8	42	16	12	4
Processed	82	98	78	92	58	84	88	96
Total	100	100	100	100	100	100	100	100

[1] Fresh weight equivalent.

TABLE 21.--Leafy, green, and yellow vegetables: Percentage distribution of quantities issued, by major items, type of institution, and geographic region

Form[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fresh	70	45	88	77	71	73	84	54
Processed	30	55	12	23	29	27	16	46
Total	100	100	100	100	100	100	100	100

[1] Processed vegetables were converted to a fresh equivalent basis.

TABLE 22.--Other vegetables and fruits: Percentage distribution of quantities issued, by major items, type of institution, and geographic region

Form[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
Other vegetables	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Fresh	41	47	76	52	33	66	65	62
Processed	59	53	24	48	67	34	35	38
Total	100	100	100	100	100	100	100	100
Other fruits								
Fresh	14	44	32	37	62	65	24	43
Processed	86	56	68	63	38	35	76	57
Total	100	100	100	100	100	100	100	100

[1] Processed vegetables and fruit were converted to a fresh equivalent basis.

TABLE 23.--Flour, cereals, and baked goods: Percentage distribution of quantities issued, by major items, type of institution and geographic region

Item[1]	Homes for the aged		Mental institutions		Homes for children		Penal institutions	
	South-east	North-east	South-east	North-east	South-east	North-east	South-east	North-east
	Percent	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*	*Percent*
Flour and mixtures.....	59	70	54	69	68	76	46	77
Cornmeal.....	17	1	21	5	18	3	40	2
Cereals and cereal products.....	24	29	25	26	14	21	14	21
Total.....	100	100	100	100	100	100	100	100

[1] Baked grain products converted to a flour equivalent basis.

LIST OF TABLES

Number		Page
1	Distribution of the institutional population, by type of institution, 1950	2
2	Suggested and actual quantities per capita of each food group issued annually to selected types of institutional kitchens, by geographic regions	6, 7
3	Suggested and actual quantities per capita of milk, cream, and cheese issued annually to selected types of institutional kitchens, by products and geographic regions	8
4	Suggested and actual quantities per capita of eggs issued annually to selected types of institutional kitchens, by products and geographic regions	10
5	Suggested and actual quantities per capita of meat, poultry, and fish issued annually to selected types of institutional kitchens, by products and geographic regions	11
6	Suggested and actual quantities per capita of fats and oils issued annually to selected types of institutional kitchens, by products and geographic regions	13
7	Suggested and actual quantities per capita of dry beans, peas, and nuts issued annually to selected types of institutional kitchens, by products and geographic regions	14
8	Suggested and actual quantities per capita of potatoes and sweetpotatoes issued annually to selected types of institutional kitchens, by products and geographic regions	15
9	Suggested and actual quantities per capita of citrus fruit and tomatoes issued annually to selected types of institutional kitchens, by products and geographic regions	17
10	Suggested and actual quantities per capita of leafy, green, and yellow vegetables issued annually to selected types of institutional kitchens, by products and geographic regions	18
11	Suggested and actual quantities per capita of other vegetables and fruits issued annually to selected types of institutional kitchens, by products and geographic regions	20
12	Suggested and actual quantities per capita of flour, cereals, and baked goods issued annually to selected types of institutional kitchens, by products and geographic regions	21
13	Suggested and actual quantities per capita of sugar and sweets issued annually to selected types of institutional kitchens, by products and geographic regions	22
14	Percentage distribution of the daily range in money value of food used in 16 non-Federal institutions during 28 days each--in summer and winter	23
15	Percentage distribution of suggested and actual quantity and expenditures for food, by major food groups, type of institutions, and geographic regions	24, 25
16	Percentage distribution of source of supply of food, by major food groups, type of institutions, and geographic regions	27, 28
17	Dairy products: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions	33
18	Eggs: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions	33
19	Meat, poultry, and fish: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions	34
20	Citrus fruit and tomatoes: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions	34

Number Page

21 Leafy, green, and yellow vegetables: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions 35

22 Other vegetables and fruits: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions 35

23 Flour, cereals, and baked goods: Percentage distribution of quantities issued, by major items, type of institutions and geographic regions 36

☆ U. S. GOVERNMENT PRINTING OFFICE : 1955 O - 334978

NATIONAL AGRICULTURAL LIBRARY
1022861587